NSK has developed a higher load-carrying capacity pressed cage with low noise and superior cage strength. Our EW series is a standard cylindrical roller bearing that facilitates interchangeability across the globe, while offering better performance for every application.
NSK has been supplying a standard cage for smaller-sized, single row cylindrical roller bearings as indicated here:

- Standard bearings — W type (Pressed steel cage with flaps)
- High load-carrying E type — ET type (Polyamide resin cage)

In the 21st century, you can now take advantage of NSK’s newly developed cylindrical roller bearing, the EW series, which combines the strengths and technologies of previous cages into a one-piece steel cage.

NSK has achieved a new design involving even newer concepts, while maintaining excellence in function and service life. Our EW series can meet your high load-carrying capacity needs for the new era.

**EW Series Bearing Interchange Guide**

### Internal design comparison of the W series and EW series

**W Series**
- **Outer ring**
- **Rollers**
- **Cage**
- **Inner ring**

**EW Series**
- **Outer ring**
- **Rollers**
- **Cage**
- **Inner ring**

- **High load rating**
  - Greater number of larger rollers
- **Higher limiting speed**
- **Maximum rigidity and low noise**
  - Optimum and well-balanced design

---

**Design concept of our newly developed standard bearing—the EW series**

Roller guide face

---

**EW Series**

**Roller guide face**
High-Strength Cage

Results of FEM analysis

EW Series

Conventional W Series

Tests confirm that the stress levels of NSK’s EW series cages are 40% lower than that of cages in conventional W series.

Cage strength test results

NSK’s EW series showed greater cage strength performance than that of our major competitors.

Higher Limiting Speed

Comparison of limiting speed

Test conditions
- Test bearing: NU308
- Oscillating angle: 30°
- Radial load: 7.4 kN
- Lubrication method: oil bath

The limiting speed of the EW series is 10-25% higher than that of conventional W series.

Higher Load Rating

Comparison of dynamic load rating C

The load rating of the EW series is 10-60% higher than that of conventional W series.

Low Noise

Noise measurement test results

Measuring conditions
- Bearing number: NU308
- Method: JIS B1548
- Radial load: 392 N
- Speed: 1 200 to 1 800 min\(^{-1}\)

The EW series is 3 to 7 dB quieter than that of our major competitors.

Noise level, dB

Speed, min\(^{-1}\)

80
70
60
50
40
30
20
10
0

1 200 1 500 1 800

EW

Major competitor

W

Microphone position and measuring load

Microphone diaphragm

Measuring load: 392 N

Comparison of dynamic load rating C,
**EW Series Bearing Table**

**EW series 305-311 and 205-213 of NU, NJ, NUP.**

<table>
<thead>
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</tr>
</tbody>
</table>

**Boundary Dimensions** (mm)

- NU: d, D, B, r
- NJ: da, db, r
- NUP: r1, Fw

**Basic Load Ratings** (N, kgf)

- NU: C1, C2, C1, C2
- NJ: C1, C2, C1, C2
- NUP: C1, C2, C1, C2

**Limiting Speeds** (min⁻¹)

- NU: 12 000, 14 000
- NJ: 9 600, 12 000
- NUP: 9 600, 12 000

**Bearing Numbers**

- NU: N200EW, NJ: N200EW, NUP: N200EW
- NJ: N205EW, NUP: N205EW
- NUP: N212EW, NUP: N212EW

**Abutment and Fillet Dimensions** (mm)

- Nunes: d1 min, d2 max, d3 min, d4 min, d5 max, f1 max, f2 max
- Nups: d1 min, d2 max, d3 min, d4 min, d5 max, f1 max, f2 max

**Permissible Axial Movement** (mm)

- NU: 1.2
- NJ: 1.2
- NUP: 1.2
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